

Forest Health Protection



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2002 North Idaho Douglas-fir Tussock Moth Trapping System Report

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INTRODUCTION

The Douglas-fir tussock moth Early Warning System in north Idaho is a cooperative effort between Forest Service (FS) and Idaho Department of Lands (IDL). This system uses a series of permanent pheromone trapping sites to identify increasing populations of the tussock moth prior to defoliation. IDL maintains Douglas-fir tussock moth trap sites from Coeur d'Alene to Moscow; the Northern Region of the FS maintains trap sites from Lewiston south and east to the Salmon River.

A pheromone trap site consists of 5 traps baited with Douglas-fir tussock moth attractant sex pheromone. Male moths are attracted to the traps. Once the average trap catch on a site reaches a threshold of 25 male moths/trap, additional population sampling is conducted in areas of concern around the trap site to determine the status of the population. Additional population sampling may include egg mass surveys, and/or early larval sampling the following spring. Once an outbreak develops, pheromone trap catches are difficult to interpret. They were not developed to be used to determine population trends during an outbreak. Therefore, elevated trap catches toward the end of an outbreak are not cause for alarm.

2002 Trapping Results

On 122 sites trapped by IDL, the average trap catch was 31.3 moths per trap, down from 71.5 in 2001. A total of 53 sites had an average of 25

moths or more per trap. The majority of these traps were in the outbreak area from Moscow to Plummer. Nearly all trap sites caught less moths in 2002 than 2001 (Randall 2002, IDL unpublished data, Appendix 1).

On 27 sites south of Lewiston trapped by the FS, the average trap catch was 1 moth per trap. Six new sites were installed in the outbreak area near Potlatch in 2002. Four out of the six new sites had an average of more than 25 moths per trap (Appendix 2).

Having a number of trap catches above the 25 moths per trap threshold this late in the outbreak cycle does not mean there will be defoliation in 2003.

2002 Egg Mass Surveys

Egg mass surveys conducted by both IDL and FS on 148 sites revealed only one small egg mass, even from areas defoliated in 2002 (FS and IDL unpublished data).

Defoliation

Aerially visible defoliation was noted on approximately 5,400 acres in 2002, down from nearly 142,000 acres defoliated in 2001. Defoliation in 2002 was located mostly on ridges on the Clearwater National Forest from Gold Hill to Crane Point. Figure 1 shows the acres defoliated by year over the last 18 years. Douglas-fir tussock moth outbreaks generally last only 2-4 years.



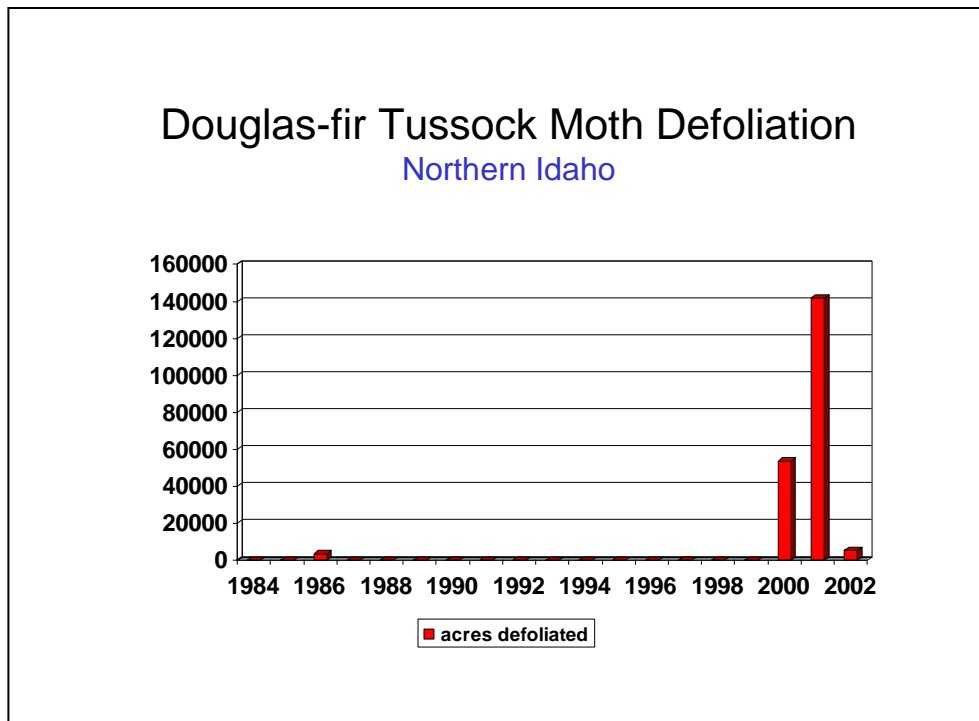


Figure 1. Acres defoliated by Douglas-fir tussock moth by year.

Conclusions

Based on egg mass surveys, defoliation estimates, and the length of the outbreak, populations are declining rapidly and there should be little to no defoliation in 2003.

Literature Cited

Randall, C. 2002. Douglas-fir tussock moth biological evaluation, Palouse Ranger District, Clearwater National Forest-2001. USDA Forest Service, State and Private Forestry, Missoula, MT FHP Report 02-5. 33 p.

Appendix 1. Average trap catch for IDL monitored sites from Coeur d'Alene to Moscow for the past 6 years.

Plot #	AREA	2002	2001	2000	1999	1998	1997
1	Elk Mountain	*	*	13.8	0.6	0.2	0.0
2	Coeur d'Alene Mountain	*	*	8.4	0.2	0.6	0.2
3	Lolo Pass	8.2	110.2	91.8	16.2	1.0	0.2
4	Charles Butte	28.2	84.8	73.6	*	0.0	0.0
5	Peterson Point	15.8	101.0	56.4	1.0	1.0	0.0
6	East Dennis	75	101.2	81.2	3.0	1.2	0.0
7	East Gold Hill	14.8	53.8	83.6	27.2	6.0	0.0
8	Flat Creek	7.6	88.0	87.6	65.8	39.2	7.8
9	Long Creek	33.6	0.2	105.4	82.0	71.4	35.0
10	Paradise Point	17	91.8	81.2	59.4	31.4	1.8
11	Mineral Mountain	75.2	56.4	73.4	66.6	50.8	3.4
12	Mission Mountain	25.6	1.6	65.6	52.4	32.2	4.2
13	Spring Valley Creek	5.4	58.0	61.2	44.8	25.6	1.4
14	Vassar Meadows	95.8	102.8	83.2	16.4	2.0	0.0
15	Fairview Knob	39	105.8	33.2	4.4	2.8	0.0
21	West Twin (10-115)	8.8	75.4	*	37.6	20.2	0.4
22	Moscow Mtn (115-114)	5.8	78.0	90.8	53.4		
101	S Fk Little Plummer Ck	52.2	92.4	70.0	15.4	0.0	0.0
102	Windfall Pass	40.4	99.6	74.2	12.4	11.4	0.0
103	Squaw Creek	9.4	89.2	55.2	5.4	4.0	0.0
104	Moses Mountain	6.4	67.8	19.0	2.2	4.2	0.0
105	Little John Creek	45	78.4	54.8	1.2	0.2	0.0
106	Emida Peak	64.2	75.8	71.0	*	0.0	0.0
107	North-South Ski Area	83.2	107.2	73.6	4.4	0.2	0.0
108	Bald Mountain	25.2	53.8	5.2	*	*	0.0
109	Laird Park	66	86.0	74.8	6.0	0.0	0.0
110	North Fork Palouse River	83.2	75.2	24.8	*	0.0	0.0
111	Mica Mountain	67.6	93.6	81.0	9.0	1.8	0.2
112	Schwartz Creek	80.6	110.6	89.0	14.2	2.0	0.8
113	Big Bear Creek	47.8	87.0	71.4	75.6	23.6	8.4
114	Big Meadow Creek	11.2	70.2	108.6	63.8	33.2	4.2
115	East Twin Mountain	7.6	85.4	87.4	55.8	52.4	1.8
116	Crane Point	51	89.0	63.2	5.1	3.2	1.2
117	Sheep Creek	27.8	83.2	79.2	53.6	59.6	3.2
118	West Fork Mission Creek	22.2	47.6	37.0	35.8	42.2	1.6
119	1 Mi N. of Mineral Mtn (11-216)	25.2	0.2	82.8	52.6		
200	2 mi W of Plummer	16.2	80.2	25.0	0.0	0.0	0.0
201	Coon Creek	21.6	93.8	50.8	3.4	0.8	0.0
202	3 mi E of Benewah	21	102.2	*	*	0.0	0.0
203	Benewah Point	8.2	92.4	53.0	4.6	0.0	0.0

Appendix 1. continued

Plot #	AREA	2002	2001	2000	1999	1998	1997
204	John's Point	23.8	*	*	*	0.0	0.0
205	3 mi E of Charles Butte	63.6	72.6	64.8	12.6	0.0	0.0
206	Sunset Mountain	20.8	*	*	*	*	*
207	Emerald Butte	23.2	*	*	*	*	*
208	Cedar Butte	22.4	76.2	*	*	*	*
209	Abes Knob	23.8	88.4	*	*	*	*
210	West Fork Deep Creek	77	90.6	91.2	74.2	20.0	0.8
211	Cherry Butte	67.2	88.6	50.6	*	0.0	0.0
212	Jackson Mountain	19.6	*	*	*	*	*
213	Red Horse Mountain	*	*	3.2	0.4	0.2	0.0
214	Fortier Creek	*	*	2.4	0.6	0.2	0.0
215	Killarney Mountain	*	*	4.4	1.2	0.4	0.2
216	1 mi NW of Mineral Mtn	1	0.2	93.0	36.4	29.8	1.4
217	Head of Sheep Creek (216-117-2)	21.2	97.2	101.8	66.2	62.8	5.4
300	Mission Mountain (#2)	6.4	67.0	71.2	16.0	56.8	2.2
301	1.5 mi S of Mineral Mtn	69.4	91.2	107.6	72.2	52.8	3.2
302	Middle Fork of Deep Creek 1 (301-216-1)	63.8	3.6	89.8	62.2	51	
303	Middle Fork of Deep Creek 2 (301-216-3)	58	15.8	99.6	72.8	42.4	1.8
400	3 mi S of Mineral Mtn	75.8	86.6	108.6	92.6	47.0	2.6
401	Flynn Butte	95.2	96.4	67.8	9.2	1.0	0.0
402	2 mi SE of Browns Mdw	15.2	57.4	112.0	65	41.2	4.0
500	3 mi SW of Harvard	18.8	74.6	111.0	78.8	59.2	59.4
501	2 mi S of Moon Hill	16.2	97.6	70.0	72.8	44.4	3.8
502	3 mi W of Crane Point	67.6	75.0				
503	3 mi N of Stanford Point	10.2	89.4	84.0	73.2	0.0	0.0
504	2 mi N of Stanford Point	47.8	86.2	75.8	52.2	0.0	0.0
505	1 mi SW of Stanford Point	38.4	47.0	88.0	90	48.4	4.4
506	1 mi S of Stanford Point	23.4	67.8	70.6	89.4	38.8	4.0
507	1 mi NE of Stanford Point	40.6	87.4	97.4	77.8	23.8	3.4
508	1 mi W of Stanford Point	20.6	92.4	95.2	97.8	49.4	7.2
509	2 mi NW of Stanford Point	43.2	81.6	95.6	75.8	46.0	10.8
510	Moon Hill	35	67.2	66.2	71.4	42.6	4.2
511	2 mi SE of Moon Hill	13.2	80.4	72.6			
512	3 mi S of Mineral Mtn	70.2	*	*	*	*	0.0
513	2 mi SW of Moon Hill	9.6	9.2	75.8	44	8.0	4.8
514	1.5 mi NW of Avon	6.8	61.4	68.6	13.0	0.0	0.0
601	1 mi NW of Elk Mtn	*	*	8.4	0.4	0.0	0.0
602	Pleasant Creek	*	*	0.4	0.0	0.0	0.0
603	West Fork Fortier Creek	*	*	3.2	0.8	0.2	0.0
604	Elk Mountain	*	*	15.4	0.8	0.2	0.0
605	Rose Creek	*	*	8.2	0.4	0.0	0.0

Appendix 1. continued

Plot #	AREA	2002	2001	2000	1999	1998	1997
701	Fourmile Creek	9	88.6	46.4	*	*	*
702	North of Granite Point	5.8	76.0	81.6	*	*	*
703	Spring Valley Creek	12.2	96.6	92.4	*	*	*
704	West Fork Big Bear Creek	13.2	61.0	41.4	*	*	*
705	2 Mi NW of Stanford PT	46.4	89.4	84.6	*	*	*
706	1 Mi S. of Iron Mtn	27.2	87.8	22.2	*	*	*
707	Iron Mtn	6.6	97.0	23.0	*	*	*
708	Little Bear Creek	65.6	108.6	*	*	*	*
709	Quartz Creek	50.4	96.2	*	*	*	*
710	Turnbow Creek	43	70.6	*	*	*	*
711	East Fork Flat Creek	55	71.4	85.8	*	*	*
712	Turnbow Point	7.8	38.0	79.4	*	*	*
713	3 Mi S. of Potlatch	6.6	30.0	4.2	*	*	*
714	Rocky Point	13.2	79.6	40.2	*	*	*
715	Hatter Creek	7.4	32.0	22.4	*	*	*
716	Head of Big Meadow Creek	11.8	80.8	82.4	*	*	*
717	Nora Creek	21.2	81.4	58.4	*	*	*
718	Crummaring Creek	12.4	70.4	68.8	*	*	*
719	Basalt Hill	19	11.6	92.8	*	*	*
720	Browns Meadow	11.2	2.6	97.6	*	*	*
721	Smith Creek	100.2	70.6	*	*	*	*
722	Prospect Peak	31.2	56.8	85.6	*	*	*
723	West Fork Mission Creek	27.8	22.2	87.4	*	*	*
724	Huckleberry Mtn	16.6	77.2	43.4	*	*	*
725	North Fork Pine Creek	21.6	93.0	15.0	*	*	*
726	Mineral Creek	20.2	78.0	76.2	*	*	*
727	South of Sanders	77.8	86.8	32.4	*	*	*
800	Mason Butte	20.8	63.0	*	*	*	*
801	Moctileme Butte	30.2	91.4	*	*	*	*
802	Plummer Butte	24.8	75.2	*	*	*	*
803	Little Plummer Creek	18	54.4	*	*	*	*
804	Lindstrom Peak	21.2	66.4	*	*	*	*
805	John Point	20.4	61.6	*	*	*	*
806	Pettis Point	22.6	71.2	*	*	*	*
807	Beaver Mtn	17.8	55.6	*	*	*	*
808	Renfro Peak	14.8	44.2	*	*	*	*
809	Crystal Peak	10.4	29.4	*	*	*	*
810	Head of Child Creek	17.2	52.8	*	*	*	*
811	Hobo Pass	7.8	25.4	*	*	*	*
812	Hemlock Butte	9.2	28.2	*	*	*	*

Appendix 1. continued

Plot #	AREA	2002	2001	2000	1999	1998	1997
813	Carpenter Peak	18.8	57.8	*	*	*	*
814	Tyson Creek	30.2	87.6	*	*	*	*
815	Willow Peak	25.2	85.2	*	*	*	*
816	Sunset Mtn	31	86.2	*	*	*	*
817	Willow Creek	22.2	73.2	*	*	*	*
818	Head of Emerald Creek	28.2	86.0	*	*	*	*
819	Emerald Butte	25	75.2	*	*	*	*
820	Head of Bobs Creek	25.4	79.0	*	*	*	*
821	East Fork of Potlatch River	25.2	67.2	*	*	*	*
822	Head of Moose Creek	24.8	69.6	*	*	*	*
823	Beals Butte	39	106.2	*	*	*	*
	* not trapped						
	Total Average	31.3	71.5	70.4	43.5	22.1	3.3

Appendix 2. Average trap catch for FS monitored sites south of Lewiston for the past 10 years, and 6 sites trapped in 2002 near Potlatch.

Plot ID	Site Name	Site #	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1	Keuterville	3-1	0.0	0.0	0.0	0.0	0.0	0.6	1.6	0.0	2.2	0.0
2	Johnson	5-1	0.0	0.0	0.0	0.0	0.0	1.2	3.0	0.2	4.0	4.8
3	Summit Landing	5-6	0.2	0.0	0.0	0.0	0.0	0.2	0.8	0.4	14.6	0.0
4	Cottonwood Butte	3-2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	2.8	0.0
5	Shin Pt	5-7	0.0	0.0	0.0	0.0	0.0	5.6	3.6	0.2	13.2	1.3
6	Cooper	5-10	0.2	0.0	0.0	0.0	0.0	0.8	1.4	2.2	3.8	0.2
7	Lake Waha	4-1	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.0	10.2	0.0
8	Skull Cr	5-9	0.0	0.0	0.0	0.0	0.0	2.0	2.2	5.2		
9	Canyon Junction	6-1	0.2	0.0	0.0	0.0	0.0		0.0		11.2	0.8
10	Forest	4-6	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0		
11	Swanson Cr	5-8	0.0	0.0	0.0	0.0	0.0	0.8	1.4	0.0	17.5	0.0
12	Fan saddle	6-2	0.0	0.0	0.0	0.2	0.0	0.4	0.4	1.0	0.6	0.2
13	Webb Cr	4-5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.4	0.0
14	Angel Butte	5-2	0.0	0.0	0.0	0.0	0.0	2.2	2.2	0.2	5.8	0.8
15	Lodge Pt	1-1	0.2	0.0	0.0	0.0	0.0	3.2	4.6	0.4	1.6	1.2
16	Black Pine	4-2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	18.2	0.2
17	Bald Mtn	5-5	0.2	0.0	0.0	0.0	0.0	0.4	3.2	0.0	36.0	9.0
18	Big Tinker	1-5	0.0	0.0	0.0	0.0	0.0	0.2	2.5	1.6	1.4	0.6
19	Junction	4-3	0.0	0.0	0.0	0.0	0.0	0.8	0.2	0.0		0.0
20	Bargamin Cr	5-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.6	4.8
21	Potatoe Hill	1-4	0.0	0.0	0.0	0.0	0.0	1.4	1.8	3.0	0.2	0.2
22	Captain John	4-4	0.2	0.0	0.0	0.0	0.0	0.8		0.0	3.6	0.2
23	Grangemont	5-3	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	16.2	2.2
24	Pine Knob	1-3	0.0	0.0	0.0	0.0	0.0	3.4	2.8	0.0	4.8	1.0
25	Christie Cr	2-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0
26	S. Cow Cr	2-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0
27	Cow Cr Saddle	2-3	0.0	0.0	0.0	0.0	0.0	0.2		0.0	0.2	0.2
28	Rhett Cr	2-1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
29	Low Saddle	2-4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0
30	Goddard	1-2	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.0		
31	Wickiup B		0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0		
32	Craigmont		0.2	0.0	0.0	0.0	0.0	1.8	1.8	0.0		
33	Laird Park	7-1										52.2
34	Little Bald Mtn.	7-2										22.0
35	Little Boulder Cr.	7-3										40.4
36	W.Fork Potlatch R.	7-4										40.4
37	Elk Creek Falls	7-5										15.8
38	Morris Creek	7-6										26.5